II. Remarks

Reconsideration and allowance of the subject application are respectfully requested.

Claims 1 and 3 - 8 are pending in the application. Claims 1 and 8 are independent. Claims 1 and 8 have been amended to correct typographical errors. In particular, "(PBF)" in claim 1 has been replaced with "(BPF)" and "period" in claim 8 has been replaced with "periodic".

All amendments presented herein are made for reasons of clarity with the specification and drawings, and not for reasons relating to the statutory requirements for patentability.

Drawings

Formal drawings will be submitted when the application is allowed.

Claim Rejections - 35 U.S.C. 102

Claims 1 and 3-8 have been rejected under 35 U.S.C. 102(b) as being anticipated by Lee et al (U.S. Patent 5,872,650) for the reasons detailed at page 2 of the Detailed Action. Applicants respectfully traverse this rejection, and submit that Claims 1 and 3-8 are patentable for the reasons set forth below.

Each of independent Clams 1 and 8 recites a novel combination of structure and/or function for a multi-wave laser. The cited reference does not disclose the configuration recited in claim 1 nor the method of claim 8. Figure 2 of Lee et al shows two tunable filters used as part of a laser ring. However, the tunable filters are placed

onto two parallel branches in order not to block each other, thus creating the effect of having two rings running at the same time. It would not be easy to scale this configuration to more than two channels. The design of the present invention uses a single ring with a periodic filter that enables substantially more than two channel lasers. The filters disclosed in Lee et al are not periodic. Furthermore, Lee et al does not disclose the exact configuration of claim 1, specifically, a periodic band-pass filter in a feedback loop between the output and the input of an optical gain module and a gain flattening filter between a gain element and the periodic band-pass filter. Likewise, the specific method of claim 8 is not disclosed. In particular, Lee et al does not disclose operating an optical gain module with a feedback input and a pump laser source and no other source nor feeding back a portion of the optical gain module output through a gain flattening filter and a periodic band-pass filter and passing the output of the periodic band-pass filter to the feedback input of the optical gain module.

Dependent claims 3-7 include the features of claim 1 and therefore, the arguments presented above with respect to claim 1 also apply to these claims.

Since not all of the claimed limitations are taught in the cited reference, it is submitted that the claims are neither disclosed nor suggested by Lee et al. Therefore, Applicants respectfully request that the rejection under 35 U.S.C. 102(b) be withdrawn.

Claim Rejections - 35 U.S.C. 103

Claims 1 and 3-8 have been rejected under 35 U.S.C. 103(a) as being unpatentable over Lelic et al (U.S. Patent 6,519,081) in view of Toyoharu et al (U.S. Patent 6,104,848).

Applicants respectfully traverse this rejection, and submit that Claims 1 and 3-8 are patentable for the reasons set forth below.

There are three basic criteria for establishing a prima facie case of obviousness:

1. The first criterion is that all of the claimed limitations must be taught or suggested by the cited prior art. The Office Action states that Lelic et al does not disclose a band-pass filter in a feedback loop and that this is disclosed in Toyohara et al. Applicants would like to point out that what is claimed in claim 1 is "a periodic band-pass filter in a feedback loop between output and input of the optical gain module". As pointed out in our response of December 3, 2002, a periodic band-pass filter has a periodic filter response over a frequency range of interest and this forces the gain module to concentrate its energy in specific frequency (wavelength) bands and consequently lase in those bands. The effect of providing a periodic band-pass filter in the feedback loop is that at the output of the optical gain module, an optical signal having multiple wavelengths is generated, with no requirement for a corresponding collection of light sources. Neither Toyohara et al nor Lelic et al disclose a periodic band-pass filter let alone such a filter in the configuration recited in claim 1. As such, Applicants submit that combining Lelic et al with Toyohara et al would not teach nor suggest the present invention. Therefore, the first criterion for prima facie obviousness fails.

2. The second criterion is that there must be some motivation to modify or combine the references. Applicants submit that there would be no motivation to combine Lelic et

al with Toyohara et al. Lelic et al is directed to gain control for an optical amplifier. All of the feedback loops disclosed therein are electrical and help control the pumps. There are no optical loops disclosed. Toyohara et al only suggest controlling the conditioning and boosting of each laser in a multi-channel system to provide equalized output. It has nothing to do with a ring laser and thus a person skilled in the art would not be lead to combine it with the system of Lelic et al. Furthermore, even in combination the two references would not form a ring laser. Thus, the second criterion for prima facie obviousness fails.

3. The third criterion is that there must be a reasonable expectation of success. The Office Action suggests that "it would have been obvious… to provide Lelic with the band pass filter in the feedback loop as taught or suggested by Toyohara". As mentioned above, the feedback loops of Lelic et al. are electrical. Inserting the band-pass filter of Toyohara into an electrical feedback loop would not be expected to operate as a ring laser. Therefore the third criterion for prima facie obviousness fails.

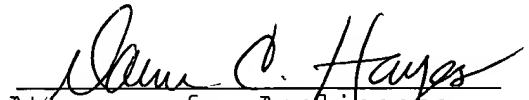
Therefore, all three criteria fail with respect to claim 1 and all of the claims dependent on claim 1, as well as claim 8 which recites "feeding back a portion of an output of the optical gain medium through a gain-flattening filter and periodic band-pass filter, and passing an output of the periodic band-pass filter to the feedback input".

For the above reasons, it is submitted that all of the claims are patentable over Lelic et al., and Toyohara et al., and therefore Applicants respectfully request that the rejection under 35 U.S.C. 103(a) be withdrawn.

In view of the above remarks, it is believed that this application is in condition for allowance, and prompt issuance of a Notice of Allowance is respectfully requested.

Applicants' undersigned attorney may be reached in our Washington, D.C. office by telephone at (202) 625-3500. All correspondence should continue to be directed to our address given below.

Respectfully submitted,



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